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August 3, 2017

Michael Wilhelm, Acting Division Chief
Policy and Licensing Division
Public Safety and Homeland Security Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: PS Docket No. 07-114
Wireless E911 Location Accuracy Requirements
Implementation Plan and Progress Report
Bluegrass Cellular, Inc.

Dear Mr. Wilhelm:

Pursuant to 47 C.F.R. § 20.18(i)(4)(i)-(ii), submitted herewith on behalf of Bluegrass Cellular, Inc., a non-nationwide Commercial Mobile Radio Service provider, is the company's indoor location accuracy Implementation Plan and Progress Report.

If questions arise the Commission is welcome to contact the undersigned.

Very truly yours,

Pamela L. Gist

Pamela L. Gist

Bluegrass Cellular, Inc.
P.O. Box 5012
Elizabethtown, Kentucky 42702-5012

E911 Location Accuracy Implementation Plan and Progress Report
47 C.F.R. § 20.18(i)(4)(i) and (ii)
PS Docket No. 07-114

Set forth below is Bluegrass Cellular, Inc.'s progress toward meeting compliance deadlines prescribed by the Federal Communications Commission in *Wireless E911 Location Accuracy Requirements*, Fourth Report and Order, PS Docket No. 07-114, FCC 15-9 (released Fed. 3, 2015) (*Fourth Report and Order*), and codified in 47 CFR § 20.18(i), *et seq*. Also provided is Bluegrass Cellular's Implementation Plan for continuing to meet the Commission's indoor location accuracy requirements.

Progress Report

Bluegrass Cellular has worked diligently and covered costs necessary to provide public safety with accurate location data for emergency callers. To date, Bluegrass Cellular has timely performed its *Fourth Report and Order* location accuracy obligations and has submitted compliance documentation to the FCC by the following deadlines:

February 3, 2017

The Non-Nationwide Carrier Live 911 Call Report was submitted to the FCC in PS Docket No. 07-114, providing aggregate live 911 call data covering reporting period October through December 2016. As a non-nationwide CMRS provider that does not provide coverage in any of the six Test Cities, and in accordance with 47 CFR § 20.18(i)(3)(ii)(E), Bluegrass Cellular's 911 live call data was collected and reported based on the largest county its service area footprint. The report was sent to the National Emergency Number Association (NENA), the Association of Public-Safety Communications Officials (APCO) and the National Association of State 911 Administrators (NASNA).

April 3, 2017

In accordance with 47 CFR § 20.18(i)(2)(i)(B)(1), Bluegrass Cellular had begun to provide dispatchable location or x/y location information within 50 meters for 40 percent of all wireless 911 calls.

June 2, 2017

As a non-nationwide CMRS provider that does not provide coverage in any of the six Test Cities, and in accordance with 47 CFR § 20.18(i)(2)(iii), Bluegrass Cellular

submitted to the FCC certification that as of April 3, 2017, it did not provide service or report live call data in one or more of the Test Cities, was providing dispatchable location or x/y location information within 50 meters for 40 percent of all wireless 911 calls, had deployed the indoor location technology or technologies used in its networks consistently with the manner in which such technologies have been tested in the test bed, and had verified based on its own live call data that it was in compliance with the two-year benchmark set forth at 47 CFR § 20.18(i)(2)(i)(B)(1).

August 1, 2017

Bluegrass Cellular submitted its second Non-Nationwide Carrier Live 911 Call Report to the FCC in PS Docket No. 07-114 on or before August 1, 2017, providing aggregate live 911 call data covering reporting period April through June 2017, and sent copies to NENA, APCO and NASNA.

Bluegrass Cellular has adopted procedures that comply with FCC indoor accuracy requirements:

Bluegrass Cellular retains for two years all testing and live call data gathered for Non-Nationwide Carrier Live 911 Call Reports, pursuant to 47 C.F.R. § 20.18(i)(3)(iii).

Bluegrass Cellular delivers x- and y-axis (latitude, longitude) confidence and uncertainty (C/U) data for all wireless 911 calls - whether placed from indoors or outdoors - at the request of a Public Safety Answering Point (PSAP), on a per-call basis, with a uniform confidence level of 90 percent, per 47 CFR § 20.18(j).

Bluegrass Cellular collects and retains for two years information on all wireless 911 calls placed on its network, including the positioning source method used to provide a location fix associated with the call, The data is made available to PSAPs upon request in accordance with 47 CFR § 20.18(k).

Implementation Plan

Bluegrass Cellular plans to continue to meet FCC indoor location accuracy requirements of 47 CFR § 20.18, including subsections (i)(2)(i) and (i)(2)(ii), *i.e.*, horizontal and vertical location. The plan will evolve according to the capabilities and advancements of critical vendors. To this end, Bluegrass Cellular utilizes the expertise of highly qualified providers of E911 technology services.

Bluegrass Cellular is provided a Wireless E911 solution by TeleCommunication Systems, Inc. / Comtech Telecommunications ("Comtech") using the efficient, open architecture of the Xypoint® Location Platform and traditional landline network to delivery public safety services. Since 1996, Comtech has been delivering E911 service to 100 million U.S. wireless subscribers, handling over 150,000 calls a day. Comtech is integrated with thousands of PSAPs, nearly all ALI (automatic location information) databases, and every major LEC (local exchange carrier). The company's location service team provides Bluegrass Cellular with end-to-end support,

switch integration, database management, geographic information services (GIS), compliance expertise, services to PSAPs and cost-recovery assistance.

Bluegrass Cellular plans to be able to utilize advanced capabilities offered by its E911 solution provider:

National Emergency Address Database (NEAD)
Comtech plans to build an interface from its Evolved Serving Mobile Location Center (ESMLC) to the NEAD. The timing of construction will depend upon availability of the NEAD for interface connection and testing with Comtech.

Small cells
Comtech's technology integrates with small cells, some of which can be deployed and provisioned in a manner that allows for a very precise location or even a civic address to be delivered to the PSAP. As Bluegrass Cellular deploys small cells, Comtech will support this capability.

Additional Global Navigation Satellite System (GNSS)
New global positioning constellations are becoming available, and Comtech's ESMLC will provide more satellite based fixes and better caller location. For example, the *Globalnaya navigatsionnaya sputnikovaya Sistema* (GLONASS), a Russian global positioning system, can be utilized, although this type of location solution is device dependent.

Device-Based Hybrid location
Comtech can deploy a Device-Based Hybrid location solution using services that embed logic onto a device, capture sensor information from the device, and send the information to a back-end service that calculates the location based on all the integrated sensor data.

Crowd source WiFi data
If the 911 caller's device can provide WiFi access point information, Comtech can integrate with a crowd sources database to derive the location.

Google Advanced Mobile Location (AML)
When Google AML is implemented in the U.S., Comtech will have another method to provide location information from Android devices. When a 911 call is made from an Android device, Google AML recognizes the dialed digits and passes location information via Short Message Service (SMS) to a Google back-end. The caller's location will be derived and delivered to 911 answering points.

Bluegrass Cellular and Comtech will work to incorporate technological advancements to deliver accurate and useful location information to emergency dispatch personnel. In keeping with FCC timelines, Bluegrass Cellular expects to comply with the following requirements:

2018

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

April 3 - deliver to PSAPs either "dispatchable location" or "x/y location within 50 meters," for 50 percent of 911 calls

April 3 - provide with wireless 911 calls that have a dispatchable location, upon the request of a PSAP, x- and y-axis (latitude, longitude) confidence and uncertainty information (C/U data) on a per-call basis, specifying the caller's location and the radius in meters from the reported position with a uniform confidence level of 90 percent, per 47 CFR § 20.18(j)(2). Collect and retain the data for two years, and make the data available to PSAPs upon request, per 47 CFR § 20.18(k).

June 2 - submit 911 location accuracy certification to FCC

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

August 3 - deliver to PSAPs uncompensated barometric data from any handset that has the capability to deliver barometric sensor data

August 3 - submit implementation plan and progress report to FCC

October 2 - submit 911 location accuracy certification to FCC

2019

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

2020

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

April 3 - provide to PSAPs either "dispatchable location" or "x/y location within 50 meters," for 70 percent of 911 calls, or extend the deadline based on the timing of Voice over LTE (VoLTE) deployment in the provider's network.

June 2 - submit 911 location accuracy certification with FCC

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

2021

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

April 3 - provide to PSAPs either "dispatchable location" or "x/y location within 50 meters," for 80 percent of 911 calls, or extend the deadline based on the timing of VoLTE deployment in the provider's network.

April 3 - provide with wireless 911 calls that have a dispatchable location, upon the request of a PSAP, x- and y-axis (latitude, longitude) confidence and uncertainty information (C/U data) on a per-call basis, specifying the caller's location and the radius in meters from the reported position with a uniform confidence level of 90 percent, per 47 CFR § 20.18(j)(3). Collect and retain the data for two years, and make the data available to PSAPs upon request, per 47 CFR § 20.18(k).

June 2 - submit 911 location accuracy certification to FCC

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

2022

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

April 3 - If service is provided to any portion of the top 25 Cellular Market Areas (CMAs), deploy in that area either (1) dispatchable location, or (2) z-axis technology that achieves the Commission-approved z-axis metric:

- Where "dispatchable location" is used, populate the National Emergency Address Database (NEAD) with a total number of dispatchable location reference points in the CMA equal to 25 percent of the CMA population.

- Where z-axis technology is used, deploy z-axis technology to cover 80 percent of the CMA population.

June 2 - submit 911 location accuracy certification to FCC

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

2023

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

2024

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

April 3 - If service is provided to any portion of the top 50 CMAs, deploy in that area dispatchable location, or deploy z-axis technology in compliance with any accuracy metric that has been approved by the Commission.

June 2 - submit 911 location accuracy certification to FCC

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

2025

February 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

August 1 - submit live 911 call location data report to FCC, NENA, APCO and NASNA

Bluegrass Cellular will continue to achieve location accuracy progress as technology permits, and it will pursue its plans in future years to enhance the safety of emergency callers inside its service area.

If additional information is required, Bluegrass Cellular will be pleased to provide it upon the Commission's request.

Scott McCloud
Senior Vice President & Chief Technical Officer

Date: August 2, 2017